Facilities Proposed

The proposed operation will be on Channel 270A (101.9 MHz) with an effective radiated power of 3.0 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional antenna, which will be mounted on an existing tower located at Bald Hill.

The proposed antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed KUNK antenna system assume a Type 1 element pattern, which is the element pattern for the OMB ring stub antenna proposed for use. The highest calculated ground level power density occurs at a distance of 3 meters from the base of the antenna support structure. At this point the power density is calculated to be 213.6 µW/cm²,

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which is 21.4% of 1000 μW/cm^2 (the FCC standard for controlled environments). This is inside the fenceline which makes this a controlled area. The nearest point on the fenceline is 9 meters from the tower.

FM translator K265DB also operates from this tower (see BPFT-20151028AFB, a recently-filed application for coordinate correction). Calculations of the power density produced by the K265DB antenna system assume a Type 1 element pattern, which is the element pattern for the Jampro JLST-2 ring stub antenna used by that station. The highest calculated ground level power density from K265DB occurs at a distance of 4 meters from the base of the antenna support structure. At this point the power density is calculated to be 30.7 μW/cm², which is 3.1% of 1000 μW/cm^2 (the FCC standard for controlled environments).

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Controlled Environment (within fence): At locations within the fenceline, the nearest point of which is 9 meters from the tower, the sum of the maxima of KUNK and K265DB will be 244.3 μW/cm², which is 24.4% of 1000 μW/cm² (the FCC standard for controlled environments).

Uncontrolled Environment (outside fence): At distances greater than 9 meters from the tower (i.e. outside the fenceline), the highest calculated ground level power density from KUNK is 95.2 μW/cm², and from K265DB is 27.0 μW/cm². The sum of these maxima is 122.2 μW/cm², which is 61.1% of 200 μW/cm² (the FCC standard for uncontrolled environments).

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

Power Density vs Distance
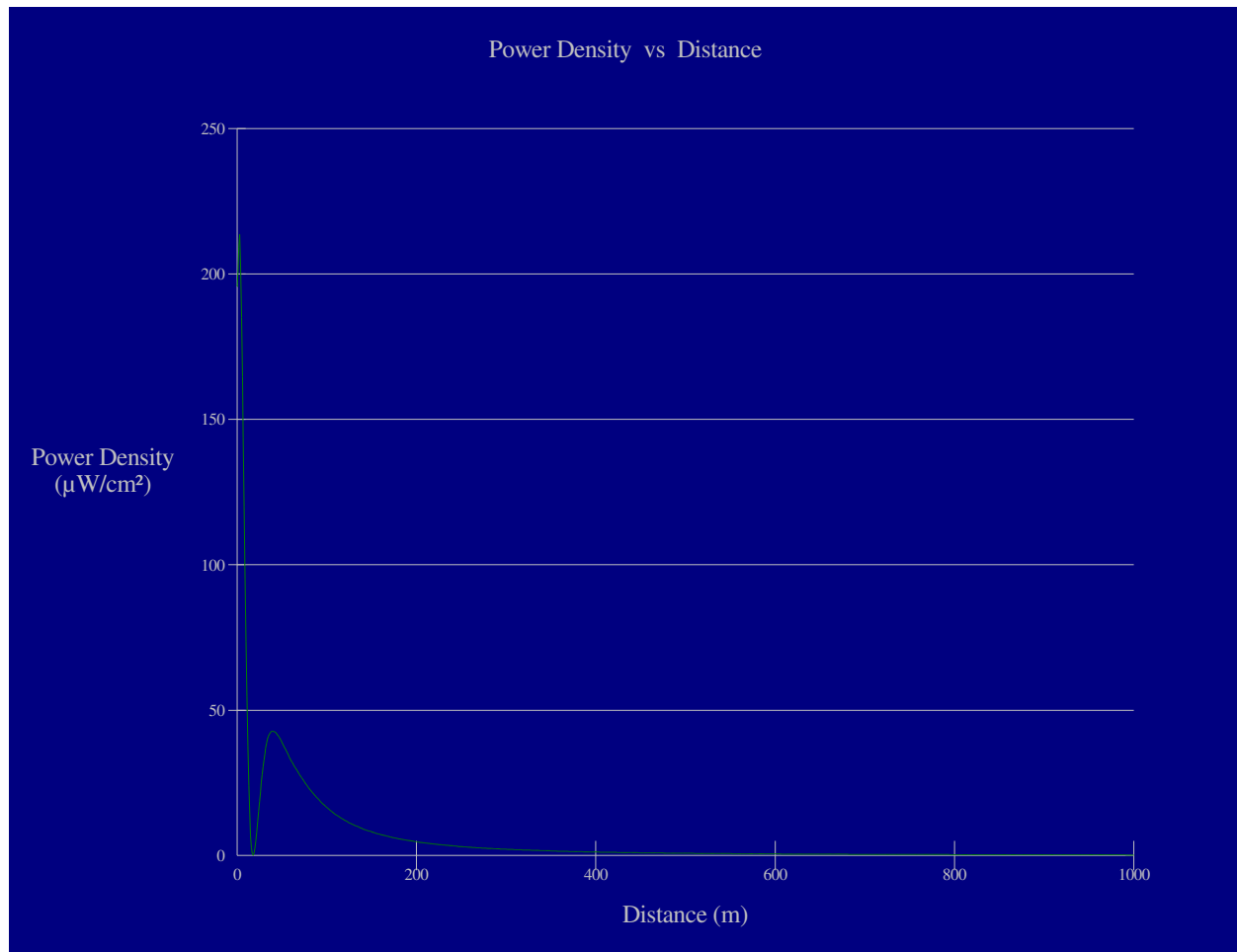
Ground-Level RF Exposure   **OET FMModel**

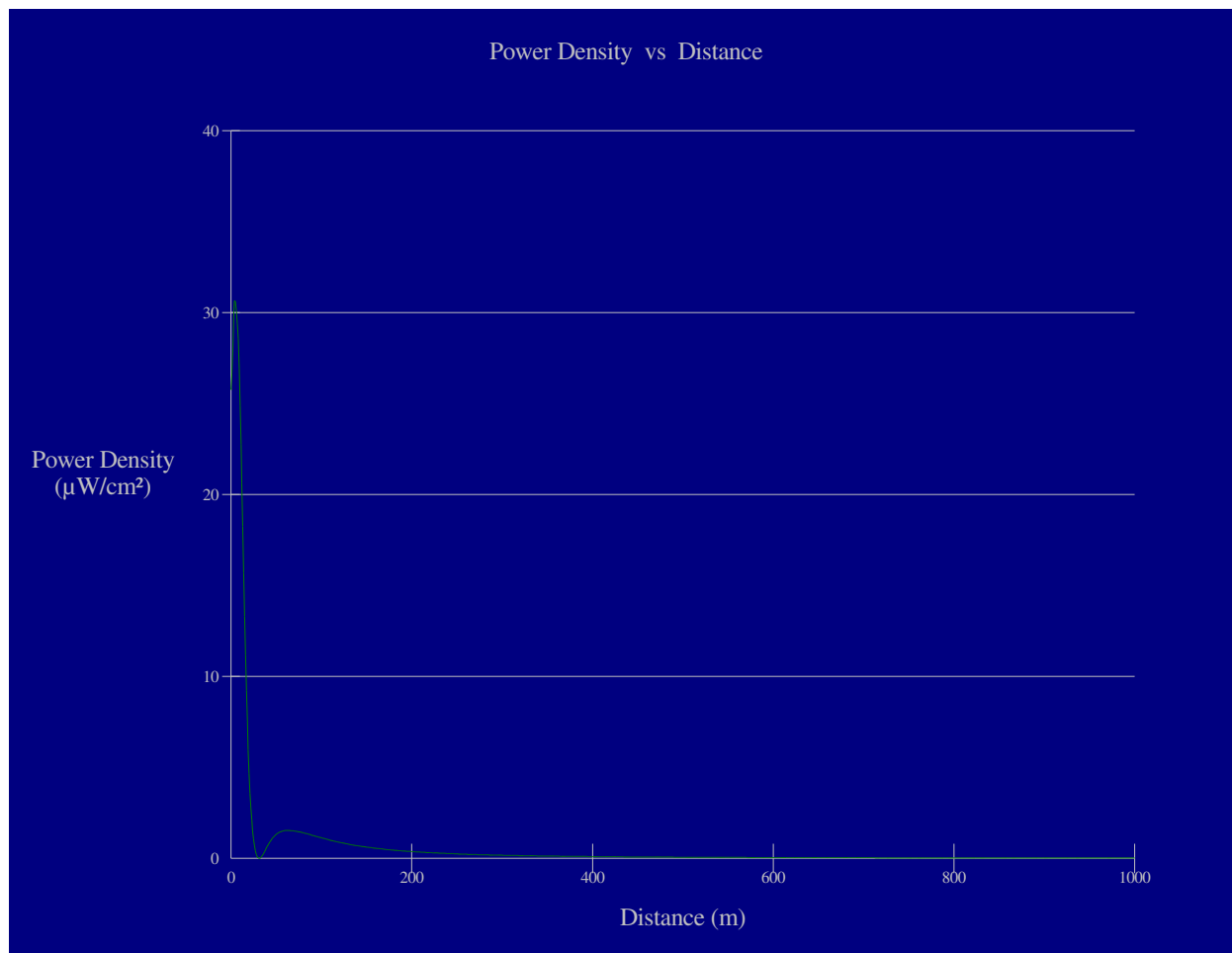**KUNK 270A Mendocino**
Antenna Type: OMB GP-2R
No. of Elements: 2
Element Spacing: 0.75 wavelength

Distance: 1000 meters
Horizontal ERP: 3.0 kW
Vertical ERP: 3.0 kW

Antenna Height: 18 meters AGL

Maximum Calculated Power Density is 213.6 µW/cm^2 at 3 meters from the antenna structure. This is inside the fenceline.

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Power Density vs Distance

Power Density (μW/cm²)

Distance (m)

Ground-Level RF Exposure   **OET FMModel**

K265DB Fort Bragg
Antenna Type: Jampro JLST-2 "ring stub"
No. of Elements: 2
Element Spacing: 1.0 wavelength

Distance: 1000 meters
Horizontal ERP: 0.250 kW
Vertical ERP: 0.250 kW

Antenna Height: 20 meters AGL

Maximum Calculated Power Density is 30.7 μW/cm² at 4 meters from the antenna structure.

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